10/018392

Figure 1

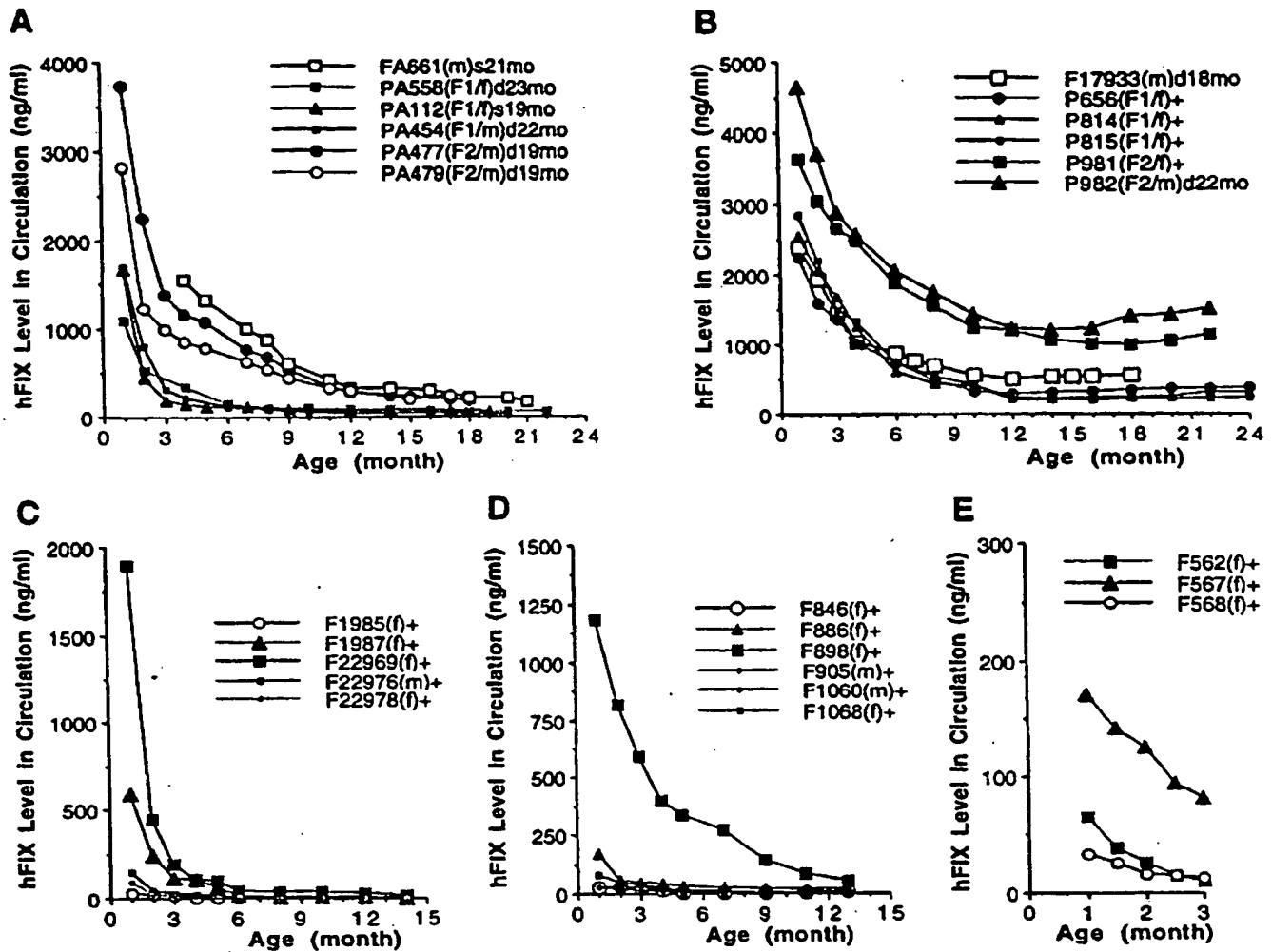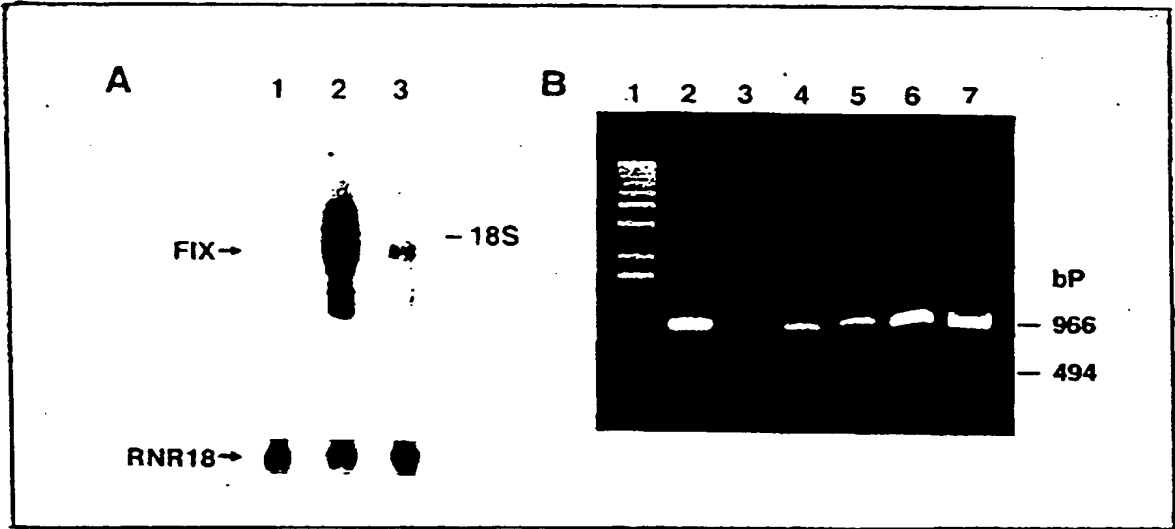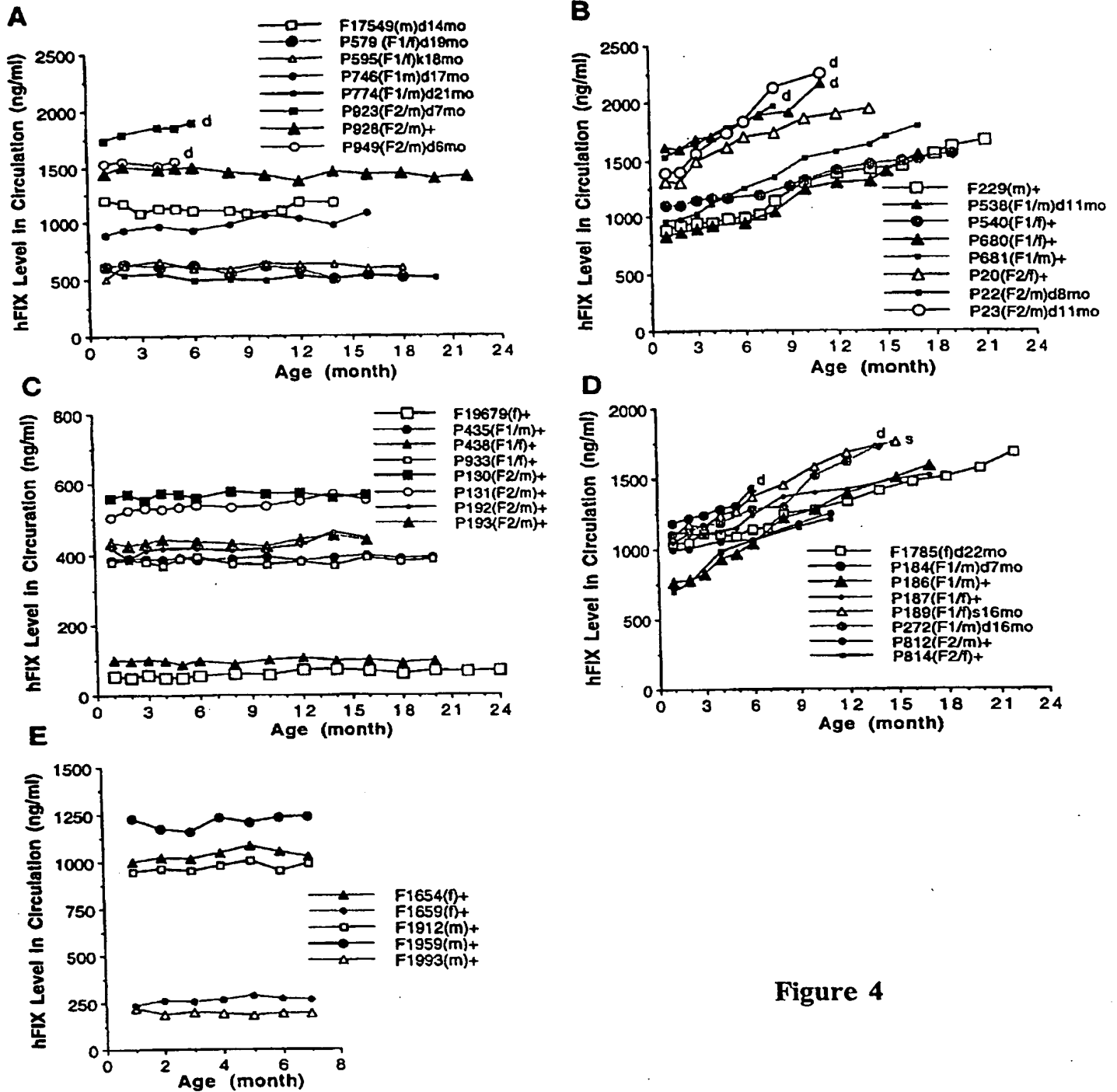|	
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-416FIXm1/0.7	119 ± 11
-416FIXm1/1.4	68 ± 8
-590FIXm1	107 ± 13
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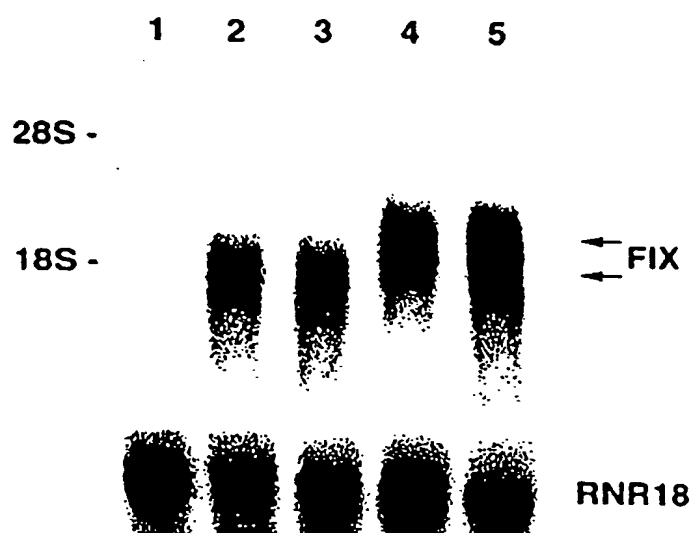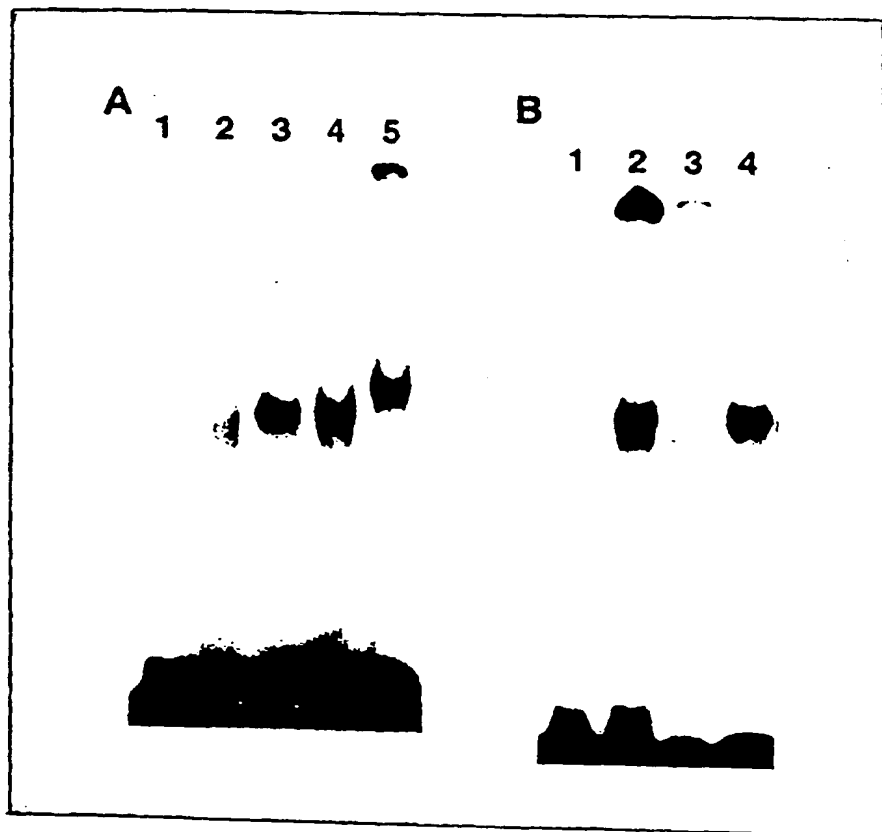Figure 2

Figure 3

Figure 4

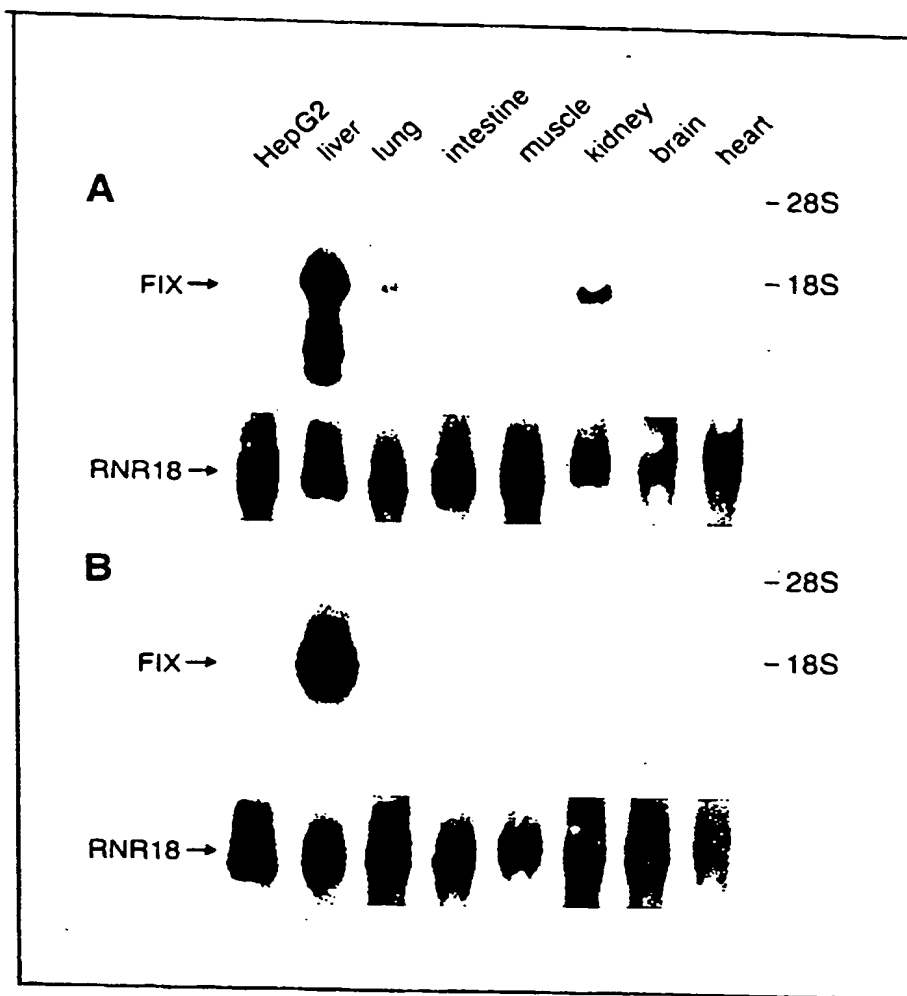Figure 5

Figure 6

Figure 7

Figure 8A

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                                                                                                             -46
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-18
Thr
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Figure 8B

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                    -17                                                        -1  +1
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       39                        46
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GTAGTGATAG TTTTCAGGAT ATGAGTTCAA GAAGCTACAT TAAAATCAAT AACAATATTT GGTAACTAAT ATTAAGTAAT AATGATGTTC CGACTCACCT  10737
TATTAATCTT TAATACAACC GTATGTGGTT AGTACTATCA TTATGCGCAT TCTATGCAGA TGAGAAAACC GCAACTCCAA CGGCCAAAAA TTACAGAGGC  10837
ATAAATGGTT TAGACAGGAC TTAAACTTCA GTGTGACCAA AACCCATGCT TCTAACTACT ATATTCAAAA CTCAGAGAAA ACGAACCCA GAAAATTGAA  10937
ATCATGACTA AATTGCTATC AACATAGGTG AAAGTCAATT AAGTACAGAA CTGGAGTATG ACTGCCCAAT TATCCCATAT AATGGGAATT CTCCACATGT  11037
ACAAACCACT TCATATGCTA AACTTGTTGA CAACATTCAA AGCTCATCCC TGAATTTGAC TATATTGATT ACATCGAAAA TGTTACATAG CAACCTTAGA  11137
ATCCTTGTGT ACCTTTTCTT CTCAAAGCCT AGATTATTTC TTTTTCCGAC GTTTTCAGTA ATTGGAGCAG TAAACCCCAG TGTCCCTTAC CTACTTGTTT  11237
ATTACCTCCA GATGCAATAT TACTGGTACT GTGATTGAGA AACGCACACA GTGCTAATGA GGAATTCACT TTCTACTCTG CACACTCTGGA AGAATAGAGA  11337
TGCAATCCTA AGGAAGAATT AACACCACA GGCTACATGA CTAAGGATAA AGAGTAGAAA ATTAGCAGGA CTCTATTAAC CGATTACAGC AATCCACCTG  11437
ACAGATGAAA AAGGCATGAA ATGAAATGAA ATGTAGCAGC TACACTCGTC CTATTGAGAA AGGAAAAAAG TCACCTGTAA TGTTGTTCAG AAATCCTTTC  11537
AGTACTAAAA AATTCATTGA CCATCTTCCT TTAGTCTCGA AAATTTCTTA GAAGGTAAAA AAAGGAAAAG GTGACAGGGC AAAGACATTT GAAAAGAAAG  11637
AAAAGAGTGA ATGAACTTGC ACACCTGGCT TGGACTCCCC ATTCCCCTTA GGTTTTCCATT GTGGGGGACA AACTAATGCC TGGGTTACCT TTCTTGACAG  11737
TGTGTTAATT GATTCAATAT CTCTGAAGTG CTACTTTCAT CTGAAAGGTT ATAAATTTGAA ATTCAGATTT ACCTGGATAA ATTTGATCTT GCTATTATGAG  11837
AAACCTCTAG AAATCCTTGG AGTAGTTACT CATTATCAGC TTAAATAATA TAGCCGGTGG AGCTGAGGGA ATGAGTAACT CAATTAGTCT CAGTTACAAC  11937
TGAAGGGCAC ATTGTTGTAA ACTATAATTG AAAACATAAA TATCTTTACC TAGTTTAAAA AATAAAGATG CTTTAAAAGG AGGAAGGGAA TAGCCCTGAG  12037
GAATGTAAAT ATAAGCACAA AACTTCTACA ACAGAGTTTG CTACGTGTGT GGCTGTGTTC CACCCAGCAA AAATGCTAAG TCTACAACTG ACACAACTTG  12137
GATACTCTCA TGTTCCCACA TTTTGTTTG GTCAAGGCTG TGCAGTTGTA CTGCAAGGCA CCACCACTCC TGGCCTCTAC AGTATATTGA TCTGACCCAG  12237
CAATCTGATC AAGGTTTAGA AAAATATTTT CAGCCCAGTT AGCTCACAAA CAAAATGAGA ATTCCCACAA ATTGCTCTTT ATCTCAGACA ACAGAGGAAA  12337
GCTACAGCAA AAGCATAAAC AAATTACCAT TTAAGTTTGT TGCTTCAAAT TAAAGACTAA TTGCAACAGC TACTAGATAG CACAGTTTAT GGGGCATCTC  12437
GGCCCCAAGT CTTTTGTCTT ATAAGGTCTT GAAAAAAAGA AAGGAGATTT TCATCAATAA GAGTTTTTTG TTATCTTTTT CCCTTGTTCA TCAGGCCCTT  12537
CACTCGGAGA GAGAGGTGTA AACGTTCAGG GCATCCAATTC TAGTTAAAGA ATATTAATTG GCTATTGGGT CCCTTTGGTT AGAATAAAGA CCTCTGTATG  12637
ATGTCCCTAG CTGTACATCA AACCCAAATA TCTCTCAGAT AAATGAAGGT CTGTAAGAAT TTGGTCATTC CTGTCTCTTC TAAAGAGTAA CAGAGGCATT  12737
TTCCCGCAGT AAAGTAGAAT GGAAAGAAAA CAAAAATCAC AAGCCTATAA ACACCTTCTT CAATTTTCCC AGCATGTCAC AGACACTACT GTCTTATTTA  12837
CTACGTATTT CTGAGGAGTA AAAAAAGGAA ATATGTTGAG TTTAGCTGAA GCACAGCATA TTTTGTGGTA AACTTGTTAA ATAAAACATC TTTTGTCCAA  12937
GCTTTGGTTG TCACACAAGT GGATATATCA GGAAATATAA AGGCAGAATA AACTAAAGCA GAACATACTA ACATTTGTAG TACGCATGAA GGGAAATTAGA  13037
AAGTGTTTGT GTTAACATGG AGGGAGGGAG AACAGATGCT TTGAGATGTT CTTCAACAGA TATTCTAGGC ACTGAGACCC CCTTCGGGCAC CAGAGAGAGC  13137
CCATATCCAC CACAGTACCT GACACATAAA TGCTCAGTAA TTGATAAATG AGTCCCATTC TAACTCTTCC TTAGCCCTGC TCTATGGAAC TCTCCCCTGA  13237
ATTCCTGCAGT CCATTATTTT ATTTCTGCAA TCTTCAGCCT TTAGCTGAGG GGCAAAAGAT TGCTGATTAG GAAGCAATAT TTCCCACCTC CTCGCCAAAA  13337
CAAGCCAAAG ATCAACAGCA GCAGCACAT ACTGAGCCCT AAAGGGCAAT GACAAATGTG GAGAATGATA CAGAGGCTC GTTCTTCTTT AGCCAATGAC  13437
ACAGAATCAC AATTGAGAAA ACACAGAGTT TATTCATTCC CATTGTGCAT GCCCTGGACA AACCAAGCTG CACCTTTCGT AACTTATCAC AATCTCATAT  1353 ?
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Figure 8C


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                                                                                                                      85
                                                   Asp Val Thr Cys Asn Ile Lys Asn Gly Arg Cys Glu Gln Phe Cys Lys Asn Ser Ala
ATGCTGTTAC TGTCTATTTT GCTTCTTTTA G AT GTA ACA TGT AAC ATT AAG AAT GGC AGA TGC GAG CAG TTT TGT AAA AAT AGT GCT  17724

                                                                                                                      127
Asp Asn Lys Val Val Cys Ser Cys Thr Glu Gly Tyr Arg Leu Ala Glu Asn Gln Lys Ser Cys Glu Pro Ala
GAT AAC AAG GTG GTT TGC TCC TGT ACT GAG GGA TAT CGA CTT GCA GAA AAC CAG AAG TCC TGT GAA CCA GCA G  17807
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                                                                                                                      128
                                                                   Val Pro Phe Pro Cys Gly Arg Val Ser Val Ser Gln
CTTCCATTTG CCAATGAGAA ATATCAGGTT ACTAATTTTT CTTCTATTTT TCTAG TG CCA TTT CCA TGT GGA AGA GTT TCT GTT TCA CAA  20397

Thr Ser Lys Leu Thr Arg Ala Glu Ala Val Phe Pro Asp Val Asp Tyr Val Asn Ser Thr Glu Ala Glu Thr Ile Leu Asp
ACT TCT AAG CTC ACC CGT GCT GAG GCT GTT TTT CCT GAT GTG GAC TAT GTA AAT TCT ACT GAA GCT GAA ACC ATT TTG GAT  20478

Asp Ile Thr Gln Asn Ser Thr Gln Ser Phe Asn Asp Phe Thr Arg Val Val Gly Gly Glu Asp Ala Lys Pro Gly Gln Phe Pro
AAC ATC ACT CAA AGC ACC CAA TCA TTT AAT GAC TTC ACT CGG GTT GTT GGT GGA GAA GAT GCC AAA CCA GGT CAA TTC CCT  20559

195
Trp Gln
TGG CAG GT ACTTTATACT GATGCTGTGT CAAAACTGGA GCTCAGCTGG CAAGACACAG GCCAGGTCGG AGACTGAGGC TATTTTACTA GACAGACCTA  20657
```

Figure 8D

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GCACATTTTT CATTTAACAA CCAAGAGCTA CATTTGTAGC AAAATCTGGG TTGTAACTTA GCCTACAGCT GAAGCCTAAG AGATTCCGTC TGTGAGAAGA  217
AATAACCCAC CTCTTTGGCC CCCCTCCCCA GGCAGGAAGC CAGGATGGTC CTTATATAAA GTTGTGCTGT CCAATAGGTA ACCACTAGCC ACATATGGCT  218
ATTTAAATTT AAATTAACTA CAATTAAGAG AAATTAAAAA TTCAATTCCT CAATTGCACC TGCCAAATTT TAAGCACATA ACAACCACAT GTGGCTAGTA  219
ACTACTGTAT TGGAGAGTGC AAGCGGAGAT AGAACACTCT ATTACTGCAC AAATTTCTAT TGGATAGCAC TTATAATAGT TTAGTGTAAC TTAAAACTCC  220
CTAGTTGCCA CAGTCATGAT TTAGTAGTAA TTTCATGGAT TTCTCTACTG AGGTTAGAAT CTCTGCCATT AGAGACTGAT AAATTTAAAG TTTGCAATTA  221
TCAAACTGGT GACAATTTAA GCCAGAATCA GGTAATGTCC TCAGTTTGGA ATTTTCTGGG ACTAGCTGTG TATCTATCCA GGATTCTTGA  222
GAATGCCTGC CATTTTTCAA CATAATGGAT GTAAGGTATT ACACATATAC CTGGGGATGG GGAGGTAGGT ATAATTGCAG AAGCATTGTG GAGAATGGTA  223
TCAAAGAGTG GCAGAACATC ACAATCAAGG TTTTCCCTTT CTTTTACCTT TGCTTTTTAA AAAGACAATA TTTGCTGGAC CTGATCTTAT AACTCATAAA  224
TCGGACACTG TATGTTCCTT TTTACCTCCT CTGTTTCTAC TTAATTGCAC CCTATGAGGA CTGCTTCCCT TACCTACCAT AACCCCTTCC TTCACTCATC  225
CATATCTTTA CTCTTCTTCA CAACTCTGTA ATATTGACCT TCTTTATGAA CCTTTCCTGG AACAATCCCT CTTAATGCAA GCACTGTTAT TATGCCTTCA  226
ATGTATTTAA TATCCATGTA TCTATTCTCT CTAATTTTGT CATTTTGTGT TCTCATGTAT TTTCATTCAT TATGTGTCCA ACTTCCATGG ATAACATGGT  227:
TACAACAAAA GATCCTACTT TATGACAATT ATCTTCCTTG GGTTTGTGGG ACATAGAACA GTGCACAGAG TAGGGGATCG AAGAACCCAG GAGAATATAT  228:
TAGCTAAGAA GATAACTTCC GTTTTTAAAA GTCCAAGATT CAGGAGATCA AAACCATCCT GGCTAACAGA GTGAAACCCC GTCTCTTCCA AAAATACAAA  229:
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CGAGATCCCG CCACTGCACT CCAGCCTGGG CGACAGAGCG AGACTCCGTC TCAAAAAAAA AAAAAAAAAA AAAGTCCAAG ATTTTAAAAA AAAAAAAAAA  230:
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AAGGATGTCT GCTTTGTGAG TTTAGCATTG TCTCCTTGTC ATTCCAGAAA TGAAATGGCA AATACATTTA AATCAGAACT AAAAAGGGGA ACAGGGTATA  231:
AAGGCTCAAT TTAGTCACAT CATTTCCGTT TCTCACCCAC CCCCTTTAAA CCAGATGTTT GCCAATGCAT TAACAATGCA GATGTTTCCT GAAAGAAAGT  232:
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GATCACTCAT ACATGCATGT GCACACATAC ACATGCACAT ATGTTCACTC CCTATTTCAT CCACATGAAC TAAGATTACT GATGTGTACA GATTCAAAGC  235:
ACTTTTATTC TTTTCCAAAG GCAAGAAGCT GAGCTACTTT CCAGAATAGT TGTGAAAGAC CCTGTCATAC TTCTGCATTG TTTCCTCCAC ACCACCTCCA  236:
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CAGAATCTCT CCTCATTTGT GGATGGGCCA GCTCCACCAT GTCATGGTTA ATCTGCAGGG AGGAAATACT AGATTTGATT GCAGATCAGA CTGCAGCAAA  238:
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AGTCTGTTAA AGAAAAGGTG TAGGTGAGCT GTTTGCAAGA GCCACAAGGG AAAGGGGAAG ACAACTTCTT TGTGGACTTA AGGGTGAAAG TTGCAAGCAG  242:
GCAAGACGAT TCTGACCTCC ATTAAGAAAG CCCAAACCAA CCAACACCA CTGGGTTGGT TACGCAGGTT GGGCAGCATT GGGAGCAAAT GTTGATTGAA  243:
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CCAGAGATCA GAGCAGGCTA AGGGACTGCT GGGATCCTGT CCAGCTTTGA CAGCCTCACG AGCCATGTTC ACCTAGCACG TATCCCGTCT GCGGTCACGG  245:
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CCCCCTATCG TTCCGGAACG CGCTGCCCGC CCCATCCTGT TTGCTACCTC CTAAAGCCAA AGGCACTGGC GGGCGGGCC AGCTTCTAAA GTCGCGCAAG  247:
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TCATTCTATT AGATTAAAAA AAAGAATAC AATGGAAGCC AAGTGATTAA GCTTTCCTTA TGCTTATATT AAGTTGTAGC ATATGCATTT ACCGATAGTT  254:
AACCGTATTA ACCTACAGAA AATGTCCAGG GAAATGGTCT ATTTCTTATT CTATTTTTGA ATCTTTTAAA TGTCTTAGCA TTTTCCCCAG  255:
TCTCCATCCA CTTCCCTCAG CTTTGGCCTG AAGCTATCTT TAAAGGTACC CTGTACAAGC TCTTGCCCTG TACAGCTAGC TACAGAGATT CAATCCTTTC  256:
TGTTCGATTA GGACACATCT CAGTGGCAGA TAACATGCAA AGTTATTATA TGTATGAACC AGAACTTGTT TTTCCTTAGG GGCCAGGATG TTACACTAAG  257:
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TGTATATTTT GTAGAAGCAT GTGTGTTGTT GGTTTTTTGTG TATGTGTGAG TCTGAAACAG GGAAAACAGG CTCCCATTAG ACTATGACTA ACAAAAATGT  264:
TTGACAGATT ATAACTCAGA TGTCTTACTC AGAGCATATG CCTTCCCATT TTCCCCATTA TTCCCCAACA TGATGTCTTT AAGAACTTGT CCTTGACCGA  265:
GCAGCAATCT CATACCCCAA ATAGCTAATA TTTTGATAGC TATGATCCTG AACGGGCAAA CATTCCAAAA CCAAGTAGTT TGTAATATCT TTAATGCAAA  266:
TATATTTTAG GCCCTTTTCCT TGGCAAGGAT GTTTGGTCAG GGGTTGGCAA AAATAATGCT CTTCAAGACT AAAAAGAACAC AACCATATTT CTTACCCATC  267:
CACCAGAAAG TAGTAGAACG CTCCAGGAAG CAAGTCTTTG TCAGGAGTCA GACTAGCTAC ATCATAATCT CTCTGCCCAG GGGCTGTGGA TGTCATCCAT  268:
CCTGGGCCTAA CTAGCCTACT GAGCTGAGAG ATGTCCAATT TCCCCCCAAT ACACTAAAGA GAGGAGAAGG ACCGTGATAT CATTGCATGT GAATTCTTAA  269:
TTCCAATTGC TTAAACAAAT ATGTTCAGTT GTAACTATCA ATACCAGTAT ATAACAGTGT TGGCCAAGTT TTATTGATGC TGACAATCAA TTGATTCAGT  270:
AGCCAGAACAC ATGCTCTTAT GACCGGCGTA CTTACGCAGG GCTTTGCACT GAGACAGGTC GTGCATCTGA GGTTTACTGC TTTCCATTTT TGTTTTGTAA  271:
TCCCCATCCC CTACCACCTG GTGCCTTAGC CAGCCCTGGC TCTCCCTCCA AACACCTGCC CAATGAGCAC TGCCACCCCA TCCGGGGTGG TTTCTCGACC  272:
TATGCTATCT TGGAAGGGGG CTTGGCCATG TGGCATCTCT GGACCAAGAA TGCGCCACAG CACATTGGAG GGTGAATG TGGGGGCACA ACATGCTCTC  273:
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GCACCTTTGA GGGTCTGCAC TGCCCCAGCA AATATCCCCA TGCTAGAAGG AGCAAAATAT TAAATGGCAA ATTTTAAAAA TGTAACAAGA TGGGTTGCAA  276:
AAGAGACTAC AGAGGAAAGC AAAAGTTTTG TATTTTAGTA TCTTCCATGG CACTTTTCTT CCTAGCTTTT GAACAAGGGG CCCCACATTT TTATTTCTCA  277:
CTGAGCCCCA CAAAGTATGT AGCCATTCCT GCCCCGGAGTG AGGACTTTTA AAACATAAAG ATTATCAAGT CTTGGAAATT CTGATTCAGT AGATATATAA  280:
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GCCGGGCAGA CTTGAGTTTG CTTCCTAGCT TTACCAACTG ATCTCAGGGG AGTTAATGTT TACCTCTAAA CTTTAGCTCA TGCATCTATA AATAAATATA  282:
TTAATATCAT GTCATAAGGA TATTATGTTG TATTAAATGT CTTTAAAACA CCACAATGAT TAGCCCAAAG TAAACACTCA ATAAATGTTC AAAAATTTAG  283:
GAAAATTGTT AAGACTGGGT TGTATGCACA CTGGTGTTTA TTATATTATG TAGTTTTTTC TGTATTTTTA CAACATTTCA GAATTAAAAG CAACAGCTAG  285:
AAAAAGAGGG AAATGGCCGG CTGCAGTCGT CACGCGTCTGTA ATCCCAGCAC TTTGGGAGGC CAAGGCGGGC GGATCACGAG GTCGAGAGAT CGAGACCATC  286:
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CTGGCCAACA TGGTGAAACC CCATCTCTAC TAAAAATACA AAAATTAACT GGGCATGGTG GCATGCGCCT GTAGTCCCAG GAGAATTGCT TGAACCTGGG  287:
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AGGCGGAGCAG TGCAGTGAGC CAAGATCACA CCACTGCTCT CCAGCCTGGT GACAGGGCAA GACTCCGTCA AAAAAAAAA AGAGAGGGGA AGCCAGAGTA  288:
TGAAAAAGGA AGTCAGAGCC CTTTAATGAG TCAGCTTGT AGGTCTCCAG GTAGGAGGCT AGTGCTTCAG TGTCTAGGAC ATAGTAGGTG TTCAGTAAAT  289:
TAAATTCAGG ACAAAAGAA CATGCCCCAA GGACCATCTG ATATCCACTT AAAGTGATGG ACTACCTCGT TTCCCTTGTT TATGAATGGG TTCATGCCTA  290:
AGACTGTTG CACTTTAATA CAAGGGCAGT CGTTCAGAAC TAGTCAGGTC CTGAAAAGGA TTTACCAAAT GTTGAGTGTG CCCTCTAGTG TTCACACTTC  291:
CCAGCTTTCT TCCTATAAAG GTGGATCAAG GCACTTGCTT ACAACTGCAA CTGAAATCCT CCAAGTCGAT CTAGACATTG AGATGGAGAA AATATTCATT  292:
GTCGACTCTA ATTATGCAAC GAATATCCAG TTGAGATAAT GGACTTGCCT CTTATCTAAT AATACCCAGG CTCAATGCGT CACTGCTTTG TCCACTTTGC  293:
CCAAAATTCA AGCACACGCTA AGTTGATATT TTAGGACAAA GGCAGCTTAC TATCCACCCA GAGGGGAGTA GAATATGGTT AAGAGAGAGT GGAAAGAATG  294:
AATGAGCCCT GCTATTCCTC ACTGCCTGGA TGGCTATAAG CACACCCCTT ATGGAGGCCT TAGGTCTTGC TTCACAATAT TCCATTTTTA AAAGGGTTTG  295:
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GCTTTTTTGT TTATGCACCA AAACACTAA TTCATCTGCA AAGCTCACAT TTCCAGAAAC ATTCCATTTC TGCCAGCACC TAGAAGCCAA TATTTTGCCT  299:
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                                                                                  196
                                                                                  Val Val Leu Asn Gly
ATTCCTGTAA CCAGCACACA TATTTATTTT TTTCTAGATC AAATGTATTA TGCAGTAAGA GTCTTAATTT TGTTTTCACA G GTT GTT TTG AAT GGT  300:
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Lys Val Asp Ala Phe Cys Gly Gly Ser Ile Val Asn Glu Lys Trp Ile Val Thr Ala Ala His Cys Val Glu Thr Gly Val
AAA GTT GAT GCA TTC TGT GGA GGC TCT ATC GTT AAT GAA AAA TGG ATT GTA ACT GCT GCC CAC TGT GTT GAA ACT GGT GTT  301:
                        233
Lys Ile Thr Val Val Ala
AAA ATT ACA GTT GTC GCA G GTAAAT ACACAGAAAG AATAATAATC TGCAGCACCA CTAGCTCTTT AATATGATTG GTACACCATA TTTTACTAAG  302:
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Figure 8E

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ATATACCCCT ATTATCACTC ATTTCAGTGA GGTACAATTA GTTCTTGATG TAGCCATTTC CATACCAGAA GGCCTTCCCA AAAATCAGTG TCATGTCACC   30429
CATCCTTTTA TCTCTGGTGC TTGGCACAAC CTGTAGCAGG TCCTCAGAAA ACAAACATTT GAATTAATGG CCAAATGAGT TTGTGCTCAA AAAAGGGGTG   30529
ACGATACTTG AAATTTGGAA AATCTAGGAT AATTCATGAC TAGTGGATTC ATTATCACCA ATGAAAGGCT TATAACAGCA TGAGTGAACA GAACCATCGC   30629
TATGATAGTC CTGAATGGCT TTTTGGTCTG AAAAATATGC ATTGGCTCTC ATTACATTTA ACCAAAATTA TCACAATATA AGAATGAGAT CTTTAACATT   30729

                                                                                                   234
                                                                                                  Gly Glu
CCCAATTAGG TCAGTGGTCC CAAGTAGTCA CTTAGAAAAT CTGTGTATGT GAAATACTGT TTGTGACTTA AAATGAAATT TATTTTTAAT AG GT GAA       30826

His Asn Ile Glu Glu Thr Glu His Thr Glu Gln Lys Arg Asn Val Ile Arg Ile Ile Pro His His Asn Tyr Asn Ala Ala
CAT AAT ATT GAG GAG ACA GAA CAT ACA GAG CAA AAG CGA AAT GTG ATT CGA ATT ATT CCT CAC CAC AAC TAC AAT GCA GCT      30907

Ile Asn Lys Tyr Asn His Asp Ile Ala Leu Leu Glu Leu Asp Glu Pro Leu Val Leu Asn Ser Tyr Val Thr Pro Ile Cys
ATT AAT AAG TAC AAC CAT GAC ATT GCC CTT CTG GAA CTG GAC GAA CCC TTA GTG CTA AAC AGC TAC GTT ACA CCT ATT TGC      30988

Ile Ala Asp Lys Glu Tyr Thr Asn Ile Phe Leu Lys Phe Gly Ser Gly Tyr Val Ser Gly Trp Gly Arg Val Phe His Lys
ATT GCT GAC AAG GAA TAC ACG AAC ATC TTC CTC AAA TTT GGA TCT GGC TAT GTA AGT GGC TGG GGA AGA GTC TTC CAC AAA      31069

Gly Arg Ser Ala Leu Val Leu Gln Tyr Leu Arg Val Pro Leu Val Asp Arg Ala Thr Cys Leu Arg Ser Thr Lys Phe Thr
GGG AGA TCA GCT TTA GTT CTT CAG TAC CTT AGA GTT CCA CTT GTT GAC CGA GCC ACA TGT CTT CGA TCT ACA AAG TTC ACC      31150

Ile Tyr Asn Asn Met Phe Cys Ala Gly Phe His Glu Gly Gly Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro His Val
ATC TAT AAC AAC ATG TTC TGT GCT GGC TTC CAT GAA GGA GGT AGA GAT TCA TGT CAA GGA GAT AGT GGG GGA CCC CAT GTT      31231

Thr Glu Val Glu Gly Thr Ser Phe Leu Thr Gly Ile Ile Ser Trp Gly Glu Glu Cys Ala Met Lys Gly Lys Tyr Gly Ile
ACT GAA GTG GAA GGG ACC AGT TTC TTA ACT GGA ATT ATT AGC TGG GGT GAA GAG TGT GCA ATG AAA GGC AAA TAT GGA ATA      31312

                                                                              415
Tyr Thr Lys Val Ser Arg Tyr Val Asn Trp Ile Lys Glu Lys Thr Lys Leu Thr STOP
TAT ACC AAG GTA TCC CGG TAT GTC AAC TGG ATT AAG GAA AAA ACA AAG CTC ACT TAA  TGAAAGATGG ATTTCCAAGG TTAATTCATT    31399

GGAATTGAAA ATTAACAGGG CCTCTCACTA ACTAATCACT TTCCCATCTT TTGTTAGATT TGAATATATA CATTCTATGA TCATTGCTTT TTCTCTTTAC   31499
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ACCTTTTCCA AATCCCAATC CCCAAATCAG TTTTTCTCTT TCTTACTCCC TCTCTCCCTT TTACCCTCCA TGGTCGTTAA AGGAGAGATG GGGAGCATCA   31999
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CCTGAAAAGT TTGGGGGAAA AGTTTCTTTC AGAGAGTTAA GTTATTTTAT ATATATAATA TATATATAAA TACAATATAA TACAATATAA ATATATAGTG   32199
TGTGTGTGTA TGCGTGTGTG TAGACACACA CGCATACACA CATATAATGG AAGCAATAAG CCATTCTAAG AGCTTGTATG GTTATGGAGG TCTGACTAGG   32299
CATGATTTCA CGAAGGCAAG ATTGGCATAT CATTGTAACT AAAAAAGCTG ACATTGACCC AGACATATTG TACTCTTTCT AAAAATAATA ATAATAATGC   32399
TAACAGAAAG AAGAGAACCG TTCGTTTGCA ATCTACAGCT AGTAGAGACT TTGAGGAAGA ATTCAACAGT GTGTCTTCAG CAGTGTTCAG AGCCAAGCAA   32499
GAAGTTGAAG TTGCCTAGAC CAGAGGACAT AAGTATCATG TCTCCTTTAA CTAGGCATACC CCGAACTGGA GAAGGGTGCA GCAGGCTCAA AGGCATAAGT   32599
CATTCCAATC AGCCAACTAA GTTGTCCTTT TCTGGTTTCG TGTTCACCAT GGAACATTTT GATTATAGTT AATCCTTCTA TCTTGAATCT TCTAGAGAGT   32699
TGCTGACCAA CTGACGTATG TTTCCCTTTG TGAAT[AATA AA]CTGGTGTT CTGGTTCATA CCTTGGCTTT TTGTGGATTC CATTGATGTG AATCAGTCAC   32799
CCTGTATTTG ATGATGCATG GGACTACTGA CAAAATCACT CTGACCCTGC CAAGCTGCTG CCTTCTCCTG CCCCAACCTC ACCCCCAGCC AGGCCTCACT    32899
CTTGCTAGTT CCTTTAGTTC TTTTAGTCAA TATATTTTTG TCTTCGCATA TAAGCTATAA TAAACATATT TTTAAATTTC TTGGCTGGGC CCAGTGGCTC   32999
ACGCCTATAA TCCCAGCACT TCTGGAGGCC AAGGTGGGCG GATCACCTGA GGTTAGGAGT TTCAGGCCAG CCTGGCCAAC ATGGTGAAAC CCTGTCTCTA   33099
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GGTGCGGGAG GTTGCAGTGA GACAAGATCG CACCCAGTGCA CTCCCCATCC TGGGTGACAG AGTGAGACTC TGTCTCAAAG AAAATAAATA AATAAAATACA   33299
TTCTTGAGG CGTTTCTTGT TAAATCATTC ATGGAGAGGC ATCCCAAACA CCACATTCAA CAAAACACTC TGAAAAATGT TTTCAAATGC AATATAACAC    33399
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AATGCTTTCA ACTGGAGTAC ATTAACTCTA CTGTCTATAT TTTTAGGGCA GCTGGGGCAT TCTGCATTGG TGGCAATCCT CTCAACAACC CTGGGACTGA   34999
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```

Figure 9A

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  61 gcgctacaac ttcatcagaa acgaagtctc caaatctgtc caacgcaaaa acacaaagga
 121 gtctaatgac taagtcttcc aaccacaact gtctgctgcg cccggaaaac aagccggggc
 181 tctggggacc cggggctcag gccgcctcgc tccggcctag ccccgccacc ttagttgtgt
 241 catcccccgg gcatgctgag catccccccg cggctccggc acagacgccc ggacctcagg
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2401 cccggaattc
```

Figure 9B

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Figure 10 (A)

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Figure 10 (B)

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Figure 10 (C)

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 7801 ccactcagaa gccttcactg tcaacttcgg ggacaccgaa gaggccaaga aacagatcaa
 7861 cgattacgtg gagaagggta ctcaaggaa aattgtggat ttggtcaagg agcttgacag
 7921 agacacagtt tttgctctgg tgaattacat cttctttaaa ggtaaggttg ctcaaccagc
 7981 ctgagctgtt tcccatagaa acaagcaaaa atatttctca aaccatcagt tcttgaactc
 8041 tccttggcaa tgcattatgg gccatagcaa tgcttttcag cgtggattct tcagttttct
 8101 acacacaaac actaaaatgt tttccatcat tgagtaattt gaggaaataa tagattaaac
 8161 tgtcaaaact actgacgctc tgcagaactt ttcagagcct ttaatgtcct tgtgtatact
 8221 gtatatgtag aatatataat gcttagaact atagaacaaa ttgtaataca ctgcataaag
 8281 ggatagtttc atggaacata ctttacacga ctctagtgtc ccagaatcag tatcagtttt
 8341 gcaatctgaa agacctgggt tcaaatcctg cctctaacac aattagcttt tgacaaaaac
 8401 aatgcattct acctctttga ggtgctaatt tctcatctta gcatgdacaa aataccattc
 8461 ttgctgtcag gttttttttag gattaaacaa atgacaaaga ctgtggggat ggtgtgtggc
 8521 atacagcagg tgatggactc ttctgtatct caggctgcct tcctgcccct gagggttaa
 8581 aatgccaggg tcctggggc cccagggcat tctaagccag ctcccactgt cccaggaaaa
 8641 cagcataggg gaggggaggt gggaggcaag gccaggggct gcttcctcca ctctgaggct
 8701 cccttgctct tgaggcaaag gagggcagtg gaggcaagcc aggctgcagt cagcacagct
 8761 aaagtcctgg ctctgctgtg gccttagtgg gggcccaggt ccctctccag ccccagtctc
 8821 ctccttctgt ccaatgagaa agctgggatc aggggtccct gaggccctg tccactctgc
 8881 atgcctcgat ggtgaagctc tgttggtatg gcagagggga ggctgctcag gcatctgcat
 8941 ttcccctgcc aatctagagg atgaggaaag ctctcaggaa tagtaagcag aatgtttgcc
 9001 ctggatgaat aactgagctg ccaattaaca aggggcaggg agccttagac agaaggtacc
 9061 aaatatgcct gatgctccaa catttttattt gtaatatcca agacaccctc aaataaacat
 9121 atgattccaa taaaaatgca cagccacgat ggcatctctt agcctgacat cgccacgatg
 9181 tagaaattct gcatcttcct ctagttttga attatcccca cacaatcttt ttcggcagct
 9241 tggatggtca gtttcagcac cttttacaga tgatgaagct gagcctcgag ggatgtgtgt
 9301 cgtcaagggg gctcagggct tctcagggag gggactcatg gtttcttatt ctgctacact
 9361 cttccaaacc ttcactcacc cctggtgatg cccaccttcc cctctctcca ggcaaatggg
 9421 agagaccctt tgaagtcaag gacaccgagg aagaggactt ccacgtggac caggtgacca
 9481 ccgtgaaggt gcctatgatg aagcgtttag gcatgtttaa catccagcac tgtaagaagc
 9541 tgtccagctg ggtgctgctg atgaaatacc tgggcaatgc caccgccatc ttcttcctgc
 9601 ctgatgaggg gaaactacag cacctggtaa atgaactcac ccacgatatc atcaccaagt
 9661 tcctggaaaa tgaagacaga aggtgattcc ccaacctgag ggtgaccaag aagctgccca
 9721 cacctcttag ccatgttggg actgaggccc atcaggactg gccagagggc tgaggagggt
 9781 gaaccccaca tccctgggtc actgctactc tgtataaact tggcttccag aatgaggcca
 9841 ccactgagtt caggcagcgc cgtccatgct ccatgaggag aacagtaccc agggtgagga
 9901 ggtaaaggtc tcgtccctgg gaacttccca ctccagtgtg gacactgtcc cttcccaata
 9961 tccagtgccc aaggcaggga cagcagcacc accacacgtt ctggcagaac caaaaaggaa
10021 cagatgggct tcctggcaaa ggcagcagtg gagtgtggag ttcaagggta gaatgtccct
10081 gggggggacgg gggaagagcc tgtgtggcaa ggcccagaaa agcaaggttc ggaattggaa
10141 cagccaggcc atgttcgcag aaggcttgcg tttctctgtc actttatcgg tgctgttaga
10201 ttgggtgtcc tgtagtaagt gatacttaaa catgagccac acattagtgt atgtgtgtgc
10261 attcgtgatt atgcccatgc cctgctgatc tagttcgttt tgtacactgt aaaaccaaga
10321 tgaaaataca aaaggtgtcg ggttcataat aggaatcgag gctggaattt ctctgttcca
10381 tgccagcacc tcctgaggtc tctgctccag gggttgagaa agaacaaaga ggctgagagg
10441 gtaacggatc agagagccca gagccagctg ccgctcacac cagaccctgc tcagggtggc
10501 attgtctccc catggaaaac cagagaggag cactcagcct ggtgtggtca ctcttctctt
10561 atccactaaa cggttgtcac tgggcactgc caccagcccc gtgtttctct gggtgtaggg
10621 ccctggggat gttacaggct ggggggccagg tgacccaaca ctacagggca agatgagaca
```

Figure 10 (D)

```
10681 ggcttccagg acacctagaa tatcagagga ggtggcattt caagcttttg tgattcattc
10741 gatgttaaca ttctttgact caatgtagaa gagctaaaag tagaacaaac caaagccgag
10801 ttcccatctt agtgtgggtg gaggacacag gagtaagtgg cagaaataat cagaaaagaa
10861 aacacttgca ctgtggtggg tcccagaaga acaagaggaa tgctgtgcca tgccttgaat
10921 ttcttttctg cacgacaggt ctgccagctt acatttaccc aaactgtcca ttactggaac
10981 ctatgatctg aagagcgtcc tgggtcaact gggcatcact aaggtcttca gcaatggggc
11041 tgacctctcc ggggtcacag aggaggcacc cctgaagctc tccaaggtga gatcaccctg
11101 acgaccttgt tgcaccatgg tatctgtagg gaagaatgtg tgggggctgc agcactgtcc
11161 tgaggctgag gaaggggccg agggaaacaa atgaagaccc aggctgagct cctgaagatg
11221 cccgtgattc actgacacgg gacggtgggc aaacagcaaa gccaggcagg ggctgctgtg
11281 cagctggcac tttcggggcc tcccttgagg ttgtgtcact gaccctgaat ttcaactttg
11341 cccaagacct tctagacatt gggccttgat ttatccatac tgacacagaa aggtttgggc
11401 taagttgttt caaaggaatt tctgactcct tcgatctgtg agatttggtg tctgaattaa
11461 tgaatgattt cagctaaagt gacacttatt ttggaaaact aaaggcgacc aatgaacaac
11521 ctgcagttcc atgaatggct gcattatctt ggggtctggg cactgtgaag gtcactgcca
11581 gggtccgtgt cctcaaggag cttcaagccg tgtactagaa aggagagagc cctggaggca
11641 gacgtggagt gacgatgctc ttccctgttc tgagttgtgg gtgcacctga gcaggggggag
11701 aggcgcttgt caggaagatg gacagagggg agccagcccc atcagccaaa gccttgagga
11761 ggagcaaggc ctatgtgaca gggagggaga ggatgtgcag ggccagggcc gtccaggggg
11821 agtgagcgct tcctgggagg tgtccacgtg agccttgctc gaggcctggg atcagcctta
11881 caacgtgtct ctgcttctct cccctccagg ccgtgcataa ggctgtgctg accatcgacg
11941 agaaagggac tgaagctgct ggggccatgt ttttagaggc catacccatg tctatccccc
12001 ccgaggtcaa gttcaacaaa ccctttgtct tcttaatgat tgaacaaaat accaagtctc
12061 ccctcttcat gggaaaagtg gtgaatccca cccaaaaata actgcctctc gctcctcaac
12121 ccctcccctc catccctggc ccctccctg gatgacatta aagaagggtt gagctggtcc
12181 ctgcctgcat gtgatctgta aatccctggg atgttttctc tg
```

Figure 11

```
   1 caccagcatc atctcctcca attcatccag ctactctgcc catgaagata atagttttca
  61 ggcggattgc ctcagatcac actatctcca cttgcccagc cctgtggaag attagcggcc
 121 atgtattcca atgtgatagg aactgtaacc tctggaaaaa ggaaggttta tcttttgtcc
 181 ttgctgctca ttggcttctg ggactgcgtg acctgtcacg ggagccctgt ggacatctgc
 241 acagccaagc cgcgggacat tcccatgaat cccatgtgca tttaccgctc cccggagaag
 301 aaggcaactg aggatgaggg ctcagaacag aagatcccgg aggccaccaa ccggcgtgtc
 361 tgggaactgt ccaaggccaa ttcccgcttt gctaccactt tctatcagca cctggcagat
 421 tccaagaatg acaatgataa cattttcctg tcacccctga gtatctccac ggcttttgct
 481 atgaccaagc tgggtgcctg taatgacacc ctccagcaac tgatggaggt atttaagttt
 541 gacaccatat ctgagaaaac atctgatcag atccacttct tctttgccaa actgaactgc
 601 cgactctatc gaaaagccaa caaatcctcc aagttagtat cagccaatcg cctttttgga
 661 gacaaatccc ttaccttcaa tgagacctac caggacatca gtgagttggt atatggagcc
 721 aagctccagc ccctggactt caaggaaaat gcagagcaat ccagagcggc catcaacaaa
 781 tgggtgtcca ataagaccga aggccgaatc accgatgtca ttccctcgga agccatcaat
 841 gagctcactg ttctggtgct ggttaacacc atttacttca agggcctgtg gaagtcaaag
 901 ttcagccctg agaacacaag gaaggaactg ttctacaagg ctgatggaga gtcgtgttca
 961 gcatctatga tgtaccagga aggcaagttc cgttatcggc gcgtggctga aggcacccag
1021 gtgcttgagt tgcccttcaa aggtgatgac atcaccatgg tcctcatctt gcccaagcct
1081 gagaagagcc tggccaaggt ggagaaggaa ctcaccccag aggtgctgca ggagtggctg
1141 gatgaattgg aggagatgat gctggtggtt cacatgcccc gcttccgcat tgaggacggc
1201 ttcagtttga aggagcagct gcaagacatg ggccttgtcg atctgttcag ccctgaaaag
1261 tccaaactcc caggtattgt tgcagaaggc cgagatgacc tctatgtctc agatgcattc
1321 cataaggcat ttcttgaggt aaatgaagaa ggcagtgaag cagctgcaag taccgctgtt
1381 gtgattgctg ccgttcgct aaaccccaac agggtgactt tcaaggccaa caggcccttc
1441 ctggttttta taagagaagt tcctctgaac actattatct tcatgggcag agtagccaac
1501 ccttgtgtta agtaaaatgt tcttattctt tgcacctctt cctatttttg gtttgtgaac
1561 agaagtaaaa ataaatacaa actacttcca tctcacatt
```

Figure 12 A

```
   1 ctgcagggggg ggggggggg ggggggctgtc atggcggcag gacggcgaac ttgcagtatc
  61 tccacgaccc gcccctacag gtgccagtgc ctccagaatg tggcagctca caagcctcct
 121 gctgttcgtg gccacctggg gaatttccgg cacaccagct cctcttgact cagtgttctc
 181 cagcagcgag cgtgcccacc aggtgctgcg gatccgcaaa cgtgccaact ccttcctgga
 241 ggagctccgt cacagcagcc tggagcggga gtgcatagag gagatctgtg acttcgagga
 301 ggccaaggaa attttccaaa atgtggatga cacactggcc ttctggtcca agcacgtcga
 361 cggtgaccag tgcttggtct tgcccttgga gcacccgtgc gccagcctgt gctgcgggca
 421 cggcacgtgc atcgacggca tcggcagctt cagctgcgac tgccgcagcg gctgggaggg
 481 ccgcttctgc cagcgcgagg tgagcttcct caattgctcg ctggacaacg gcggctgcac
 541 gcattactgc ctagaggagg tgggctggcg gcgctgtagc tgtgcgcctg gctacaagct
 601 gggggacgac ctcctgcagt gtcaccccgc agtgaagttc ccttgtggga ggccctggaa
 661 gcggatggag aagaagcgca gtcacctgaa acgagacaca gaagaccaag aagaccaagt
 721 agatccgcgg ctcattgatg ggaagatgac caggcgggga gacagcccct ggcaggtggt
 781 cctgctggac tcaaagaaga agctggcctg cggggcagtg ctcatccacc cctcctgggt
 841 gctgacagcg gcccactgca tggatgagtc caagaagctc cttgtcaggc ttggagagta
 901 tgacctgcgg cgctgggaga agtgggagct ggacctggac atcaaggagg tcttcgtcca
 961 ccccaactac agcaagagca ccaccgacaa tgacatcgca ctgctgcacc tggcccagcc
1021 cgccaccctc tcgcagacca tagtgcccat ctgcctcccg gacagcggcc ttgcagagcg
1081 cgagctcaat caggccggcc aggagaccct cgtgacgggc tggggctacc acagcagccg
1141 agagaaggag gccaagagaa accgcacctt cgtcctcaac ttcatcaaga ttcccgtggt
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1381 ccttcacaac tacggcgttt acaccaaagt cagccgctac ctcgactgga tccatgggca
1441 catcagagac aaggaagccc cccagaagag ctgggcacct tagcgaccct ccctgcaggg
1501 ctgggctttt gcatggcaat ggatgggaca ttaaagggac atgtaacaag cacaccggcc
1561 tgctgttctg tccttccatc cctctttttgg gctcttctgg agggaagtaa catttactga
1621 gcacctgttg tatgtcacat gccttatgaa tagaatctta actcctagag caactctgtg
1681 gggtggggag gagcagatcc aagttttgcg gggtctaaag ctgtgtgtgt tgaggggggat
1741 actctgttta tgaaaaagaa taaaaacac aaccacgaaa aaaaaaaaa aaaaaaaaa
1801 aaaaaaaaaa aaaaaaccc ccccccgccc ccccccctg cag
```

Figure 12 B

```
   1 agtgaatctg ggcgagtaac acaaaacttg agtgtcctta cctgaaaaat agaggttaga
  61 gggatgctat gtgccattgt gtgtgtgtgt tgggggtggg gattgggggt gatttgtgag
 121 caattggagg tgagggtgga gcccagtgcc cagcacctat gcactgggga cccaaaaagg
 181 agcatcttct catgatttta tgtatcagaa attgggatgg catgtcattg ggacagcgtc
 241 tttttcttg tatggtggca cataaataca tgtgtcttat aattaatggt attttagatt
 301 tgacgaaata tggaatatta cctgttgtgc tgatcttggg caaactataa tatctctggg
 361 caaaaatgtc cccatctgaa aaacagggac aacgttcctc cctcagccag ccactatggg
 421 gctaaaatga gaccacatct gtcaagggtt ttgccctcac ctccctccct gctggatggc
 481 atccttggta ggcagaggtg ggcttcgggc agaacaagcc gtgctgagct aggaccagga
 541 gtgctagtgc cactgtttgt ctatggagag ggaggcctca gtgctgaggg ccaagcaaat
 601 atttgtggtt atggattaac tcgaactcca ggctgtcatg gcggcaggac ggcgaacttg
 661 cagtatctcc acgacccgcc cctgtgagtc cccctccagg caggtctatg aggggtgtgg
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 781 agggtgctca acaagcctga gcttgggggta aaaggacaca aggccctcca caggccaggc
 841 ctggcagcca cagtctcagg tccctttgcc atgcgcctcc ctctttccag gccaagggtc
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 961 cccacttcca cctttggggg tgtcggattt gaacaaatct cagaagcggc ctcagaggga
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1141 tggtggtttg gggcaggggt tgaatttcca ggcctaaaac cacacaggcc tggccttgag
1201 tcctggctct gcgagtaatg catggatgta aacatggaga cccaggacct tgcctcagtc
1261 ttccggagtct ggtgcctgca gtgtactgat ggtgtgagac cctactcctg gaggatgggg
1321 gacagaatct gatcgatccc ctgggttggt gacttccctg tgcaatcaac ggagaccagc
1381 aagggttgga ttttttaataa accacttaac tcctccgagt ctcagtttcc ccctctatga
1441 aatgggggttg acagcattaa taactacctc ttgggtggtt gtgagcctta actgaagtca
1501 taatatctca tgtttactga gcatgagcta tgtgcaaagc ctgttttgag agctttatgt
1561 ggactaactc ctttaattct cacaacaccc tttaaggcac agatacacca cgttattcca
1621 tccattttac aaatgaggaa actgaggcat ggagcagtta agcatcttgc ccaacattgc
1681 cctccagtaa gtgctggagc tggaatttgc accgtgcagt ctggcttcat ggcctgccct
1741 gtgaatcctg taaaaattgt ttgaaagaca ccatgagtgt ccaatcaacg ttagctaata
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1861 aaacatcctg gcaccctctc cactgcattc tggagctgct ttctaggcag gcagtgtgag
1921 ctcagcccca cgtagagcgg gcagccgagg ccttctgagg ctatgtctct agcgaacaag
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2101 cctcctcaga caggtgccag tgcctccaga atgtggcagc tcacaagcct cctgctgttc
2161 gtggccacct ggggaatttc cggcacacca gctcctcttg gtaaggccac cccacccccta
2221 ccccgggacc cttgtggcct ctacaaggcc ctggtggcat ctgcccaggc cttcacagct
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2461 tcacagagtc ccctgggcct tccctctcca cccactcact ccctcaactg tgaagacccc
2521 aggcccaggc taccgtccac actatccagc acagcctccc ctactcaaat gcacactggc
2581 ctcatggctg ccctgcccca acccctttcc tggtctccac agccaacggg aggaggccat
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2881 gagcccaggc cacacctggg gacccttcct gggtgatagg tctgtctatc ctccaggtgt
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3121 atgttttaca tgacggtctc atccccatgt ttttggatga gtaaattgaa ccttagaaag
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3361 agaccttccc aggctctccc agctctgctt cctcagaccc cctcatggcc ccagcccctc
3421 ttaggcccct caccaaggtg agctcccctc cctccaaaac cagactcagt gttctccagc
3481 agcgagcgtg cccaccaggt gctgcggatc cgcaaacgtg ccaactcctt cctggaggag
3541 ctccgtcaca gcagcctgga gcgggagtgc atagaggaga tctgtgactt cgaggaggcc
```

Figure 12 B (continued)

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3601 aaggaaattt tccaaaatgt ggatgacaca gtaaggccac catgggtcca gaggatgagg
3661 ctcaggggcg agctggtaac cagcaggggc ctcgaggagc aggtggggac tcaatgctga
3721 ggccctctta ggagttgtgg gggtggctga gtggagcgat taggatgctg gccctatgat
3781 gtcggccagg cacatgtgac tgcaagaaac agaattcagg aagaagctcc aggaaagagt
3841 gtggggtgac cctaggtggg gactcccaca gccacagtgt aggtggttca gtccaccctc
3901 cagccactgc tgagcaccac tgcctccccg tcccacctca caaagagggg acctaaagac
3961 caccctgctt ccacccatgc ctctgctgat cagggtgtgt gtgtgaccga aactcacttc
4021 tgtccacata aaatcgctca ctctgtgcct cacatcaaag ggagaaaatc tgattgttca
4081 ggggtcgga agacagggtc tgtgtcctat ttgtctaagg gtcagagtcc tttggagccc
4141 ccagagtcct gtggacgtgg ccctaggtag tagggtgagc ttggtaacgg ggctggcttc
4201 ctgagacaag gctcagaccc gctctgtccc tggggatcgc ttcagccacc aggacctgaa
4261 aattgtgcac gcctgggccc ccttccaagg catccaggga tgctttccag tggaggcttt
4321 cagggcagga gaccctctgg cctgcaccct ctcttgccct cagcctccac ctccttgact
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5041 gcccctccgc acaccggctg caggagcctg acgctgcccg ctctctccgc agctggcctt
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5161 cccctcggga tctctggccg ctgacccccct accccgcctt gtgtcgcaga cggtgaccag
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5281 atcgacggca tcggcagctt cagctgcgac tgccgcagcg gctgggaggg ccgcttctgc
5341 cagcgcggtg aggggagag gtggatgctg gcgggcggcg gggcggggct ggggccgggt
5401 tggggggcgcg gcaccagcac cagctgcccg cgccctcccc tgcccgcaga ggtgagcttc
5461 ctcaattgct ctctggacaa cggcggctgc acgcattact gcctagagga ggtgggctgg
5521 cggcgctgta gctgtgcgcc tggctacaag ctggggacg acctcctgca gtgtcaccc
5581 gcaggtgaga agccccaat acatcgccca ggaatcacgc tgggtgcggg gtgggcaggc
5641 ccctgacggg cgcggcgcgg ggggctcagg agggtttcta gggagggagc gaggaacaga
5701 gttgagcctt ggggcagcgg cagacgcgcc caacaccggg gccactgtta gcgcaatcag
5761 cccgggagct gggcgcgccc tccgctttcc ctgcttcctt tcttcctggc gtccccgctt
5821 cctccgggcg cccctgcgac ctggggccac ctcctggagc gcaagcccag tggtggctcc
5881 gctccccagt ctgagcgtat ctggggcgag gcgtgcagcg tcctcctcca tgtagcctgg
5941 ctgcgttttt ctctgacgtt gtccggcgtg catcgcattt ccctctttac cccttgctt
6001 ccttgaggag agaacagaat cccgattctg ccttcttcta tattttcctt tttatgcatt
6061 ttaatcaaat ttatatatgt atgaaactct aaaaatcaga gttttacaac tcttacactt
6121 tcagcatgct gttccttggc atgggtcctt ttttcattca ttttcataaa aggtggaccc
6181 ttttaatgtg gaaattccta tcttctgcct ctagggcatt tatcacttat ttcttctaca
6241 atctcccctt tacttcctct attttctctt tctggacctc ccattattca gacctctttc
6301 ctctagtttt attgtctctt ctatttccca tctctttgac tttgtgtttt ctttcaggga
6361 actttctttt ttttctttt ttttgagatg gagtttcact cttgttgtcc caggctggag
6421 tgcaatgacg tgatctcagc tcaccacaac ctccgcctcc tggattcaag cgattctcct
6481 gccgcagcct cccgagtagc tgggattaca ggcatgcgcc accacgccca gctaatttg
6541 tgtttttagt agagaagggg tttctccgtg ttggtcaagc tggtcttgaa ctcctgacct
6601 caggtgatcc acctgccttg gcctcctaaa gtgctgggat tacaggcgtg agccaccgcg
6661 cccagcctct ttcagggaac tttctacaaa tttataattc aattcttctg cagaaaaaaa
6721 ttttggcca ggctcagtag ctcagaccaa taattccagc actttgagag gctgaggtgg
6781 gaggattgct tgagcttggg agtttgagac tagcctgggc aacacagtga gaccctgtct
6841 ctattttaa aaaagtaaa aaaagatcta aaatttaac tttttatttt gaaataatta
6901 gatatttcca ggaagctgca aagaaatgcc tggtgggcct gttggctgtg ggtttcctgc
6961 aaggccgtgg gaaggccctg tcattggcag aaccccagat cgtgagggct ttccttttag
7021 gctgctttct aagaggactc ctccaagctc ttggaggatg gaagacgctc acccatggtg
7081 ttcggcccct cagagcaggg tggggcaggg gagctggtgc ctgtgcaggc tgtggacatt
7141 tgcatgactc cctgtggtca gctaagagca ccactccttc ctgaagcggg gcctgaagtc
```

Figure 12 B (continued)

```
7201 cctagtcaga gcctctggtt caccttctgc aggcagggag aggggagtca agtcagtgag
7261 gagggctttc gcagtttctc ttacaaactc tcaacatgcc ctcccacctg cactgccttc
7321 ctggaagccc cacagcctcc tatggttccg tggtccagtc cttcagcttc tgggcgcccc
7381 catcacgggc tgagattttt gctttccagt ctgccaagtc agttactgtg tccatccatc
7441 tgctgtcagc ttctggaatt gttgctgttg tgccctttcc attcttttgt tatgatgcag
7501 ctcccctgct gacgacgtcc cattgctctt ttaagtctag atatctggac tgggcattca
7561 aggcccattt tgagcagagt cgggctgacc tttcagccct cagttctcca tggagtatgc
7621 gctctcttct tggcagggag gcctcacaaa catgccatgc ctattgtagc agctctccaa
7681 gaatgctcac ctccttctcc ctgtaattcc tttcctctgt gaggagctca gcagcatccc
7741 attatgagac cttactaatc ccagggatca cccccaacag ccctgggta caatgagctt
7801 ttaagaagtt taaccaccta tgtaaggaga cacaggcagt gggcgatgct gcctggcctg
7861 actcttgcca ttgggtggta ctgtttgttg actgactgac tgactgactg gagggggttt
7921 gtaatttgta tctcagggat taccccaac agccctgggg tacaatgagc cttcaagaag
7981 tttaacaacc tatgtaagga cacacagcca gtgggtgatg ctgcctggtc tgactcttgc
8041 cattcagtgg cactgtttgt tgactgactg actgactgac tggctgactg gagggggttc
8101 atagctaata ttaatggagt ggtctaagta tcattggttc cttgaaccct gcactgtggc
8161 aaagtggccc acaggctgga ggaggaccaa gacaggaggg cagtctcggg aggagtgcct
8221 ggcaggcccc tcaccacctc tgcctacctc agtgaagttc ccttgtggga ggccctggaa
8281 gcggatggag aagaagcgca gtcacctgaa acgagacaca gaagaccaag aagaccaagt
8341 agatccgcgg ctcattgatg ggaagatgac caggcgggga gacagcccct ggcaggtggg
8401 aggcgaggca gcaccggctc gtcacgtgct gggtccggga tcactgagtc catcctggca
8461 gctatgctca gggtgcagaa accgagaggg aagcgctgcc attgcgtttg ggggatgatg
8521 aaggtggggg atgcttcagg gaaagatgga cgcaacctga ggggagagga gcagccaggg
8581 tgggtgaggg gaggggcatg ggggcatgga ggggtctgca ggagggaggg ttacagtttc
8641 taaaaagagc tggaaagaca ctgctctgct ggcgggattt taggcagaag ccctgctgat
8701 gggagagggc taggagggag ggccgggcct gagtaccact ccagcctcca catgggaact
8761 gacacttact gggttcccct ctctgccagg catgggggag ataggaacca acaagtggga
8821 gtatttgccc tggggactca gactctgcaa gggtcaggac cccaaagacc cggcagccca
8881 gtgggaccac agccaggacg gcccttcaag ataggggctg agggaggcca aggggaacat
8941 ccaggcagcc tgggggccac aaagtcttcc tggaagacac aaggcctgcc aagcctctaa
9001 ggatgagagg agctcgctgg gcgatgttgg tgtggctgag ggtgactgaa acagtatgaa
9061 cagtgcagga acagcatggg caaaggcagg aagacaccct gggacaggct gacactgtaa
9121 aatgggcaaa aatagaaaac gccagaaagg cctaagccta tgcccatatg accagggaac
9181 ccaggaaagt gcatatgaaa cccaggtgcc ctggactgga ggctgtcagg aggcagccct
9241 gtgatgtcat catcccaccc cattccaggt ggtcctgctg gactcaaaga agaagctggc
9301 ctgcggggca gtgctcatcc accctcctg ggtgctgaca gcggcccact gcatggatga
9361 gtccaagaag ctccttgtca ggcttggtat gggctggagc caggcagaag ggggctgcca
9421 gaggcctggg taggggggacc aggcaggctg ttcaggtttg ggggaccccg ctccccaggt
9481 gcttaagcaa gaggcttctt gagctccaca gaaggtgttt gggggaaga ggcctatgtg
9541 cccccaccct gcccacccat gtacacccag tattttgcag taggggggttc tctggtgccc
9601 tcttcgaatc tgggcacagg tacctgcaca cacatgtttg tgaggggcta cacagacctt
9661 cacctctcca ctcccactca tgaggagcag gctgtgtggg cctcagcacc cttgggtgca
9721 gagaccagca aggcctggcc tcagggctgt gcctcccaca gactgacagg gatggagctg
9781 tacagaggga gccctagcat ctgccaaagc cacaagctgc ttccctagca ggctggggc
9841 tcctatgcat tggccccgat ctatggcaat ttctggaggg ggggtctggc tcaactcttt
9901 atgccaaaaa gaaggcaaag catattgaga aaggccaaat tcacatttcc tacagcataa
9961 tctatgccag tggccccgtg gggcttggct tagaattccc aggtgctctt cccagggaac
10021 catcagtctg gactgagagg accttctctc tcaggtggga cccggccctg tcctccctgg
10081 cagtgccgtg ttctgggggt cctcctctct gggtctcact gcccctgggg tctctccagc
10141 tacctttgct ccatgttcct ttgtggctct ggtctgtgtc tggggtttcc aggggtctcg
10201 ggcttccctg ctgcccattc cttctctggt ctcacggctc cgtgactcct gaaaaccaac
10261 cagcatccta ccccttttgga ttgacacctg ttggccactc cttctggcag gaaaagtcac
10321 cgttgatagg gttccacggc atagacaggt ggctccgcgc cagtgcctgg gacgtgtggg
10381 tgcacagtct ccgggtgaac cttcttcagg ccctctccca ggcctgcagg ggcacagcag
10441 tgggtgggcc tcaggaaagt gccactgggg agaggctccc cgcagcccac tctgactgtg
10501 ccctctgccc tgcaggagag tatgacctgc ggcgctggga gaagtgggag ctggacctgg
10561 acatcaagga ggtcttcgtc caccccaact acagcaagag caccaccgac aatgacatcg
10621 cactgctgca cctggcccag cccgccaccc tctcgcagac catagtgccc atctgcctcc
10681 cggacagcgg ccttgcagag cgcgagctca atcaggccgg ccaggagacc ctcgtgacgg
10741 gctggggcta ccacagcagc cgagagaagg aggccaagag aaaccgcacc ttcgtcctca
10801 acttcatcaa gattcccgtg gtcccgcaca atgagtgcag cgaggtcatg agcaacatgg
```

Figure 12 B (continued)

```
10861 tgtctgagaa catgctgtgt gcgggcatcc tcggggaccg gcaggatgcc tgcgagggcg
10921 acagtggggg gcccatggtc gcctccttcc acggcacctg gttcctggtg ggcctggtga
10981 gctggggtga gggctgtggg ctccttcaca actacggcgt ttacaccaaa gtcagccgct
11041 acctcgactg gatccatggg cacatcagag acaaggaagc cccccagaag agctgggcac
11101 cttagcgacc ctccctgcag ggctgggctt ttgcatggca atggatggga cattaaaggg
11161 acatgtaaca agcacaccgg cctgctgttc tgtccttcca tccctctttt gggctcttct
11221 ggaggagagt aacatttact gagcacctgt tgtatgtcac atgccttatg aatagaatct
11281 taactcctag agcaactctg tggggtgggg aggagcagat ccaagttttg cggggtctaa
11341 agctgtgtgt gttgagggggg atactctgtt tatgaaaaag aataaaaaac acaaccacga
11401 agccactaga gcctttttcca gggctttggg aagagcctgt gcaagccggg gatgctgaag
11461 gtgaggcttg accagctttc cagctagccc agctatgagg tagacatgtt tagctcatat
11521 cacagaggag gaaactgagg ggtctgaaag gtttacatgg tggagccagg attcaaatct
11581 aggtctgact ccaaaaccca ggtgctttt tctgttctcc actgtcctgg aggacagctg
11641 tttcgacggt gctcagtgtg gaggccacta ttagctctgt agggaagcag ccagagaccc
11701 agaaagtgtt ggttcagccc agaat
```

Figure 13 (A)

SEQ ID NO:3
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     ggcctctc actaactaat cactttccca tcttttgtta gatttgaata tatacattct
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    tagaaaatgg aaccactaga ggaatataat gtgttaggaa attacagtca tttctaaggg
    cccagccctt gacaaaattg tgaagttaaa ttctccactc tgtccatcag atactatggt
    tctccactat ggcaactaac tcactcaatt ttccctcctt agcagcattc catcttcccg
    atcttctttg cttctccaac caaaacatca atgtttatta gttctgtata cagtacagga
    tctttggtct actctatcac aaggccagta ccacactcat gaagaaagaa cacaggagta
    gctgagaggc taaaactcat caaaaacact actccttttc ctctacccta ttcctcaatc
    ttttaccttt tccaaatccc aatccccaaa tcagtttttc tctttcttac tccctctctc
    ccttttaccc tccatggtcg ttaaaggaga gatggggagc atcattctgt tatacttctg
    tacacagtta tacatgtcta tcaaacccag acttgcttcc atagtggaga cttgctttc
    agaacatagg gatgaagtaa ggtgcctgaa aagtttgggg gaaaagtttc tttcagagag
    ttaagttatt ttatatatat aaatatatata taaaatatat aatatacaat ataaatatat
    agtgtgtgtg tgtatgcgtg tgtgtagaca cacacgcata cacacatata atggaagcaa
    taagccattc taagagcttg tatggttatg gaggtctgac taggcatgat ttcacgaagg
    caagattggc atatcattgt aactaaaaaa gctgacattg acccagacat attgtactct
    ttctaaaaat aataataata atgctaacag aaagaagaga accgttcgtt tgcaatctac
    agctagtaga gactttgagg aagaattcaa cagtgtgtct tcagcagtgt tcagagccaa
    gcaagaagtt gaagttgcct agaccagagg acataagtat catgtctcct ttaactagca
    taccccgaag tggagaaggg tgcagcaggc tcaaaggcat aagtcattcc aatcagccaa
    ctaagttgtc cttttctggt ttcgtgttca ccatggaaca ttttgattat agttaatcct
    tctatcttga atctt
```

SEQ ID NO:76
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    tagaaaatgg aaccactaga ggaatataat gtgttaggaa attacagtca tttctaaggg
    cccagccctt gacaaaattg tgaagttaaa ttctccactc tgtccatcag atactatggt
    tctccactat ggcaactaac tcactcaatt ttccctcctt agcagcattc catcttcccg
    atcttctttg cttctccaac caaaacatca atgtttatta gttctgtata cagtacagga
    tctttggtct actctatcac aaggccagta ccacactcat gaagaaagaa cacaggagta
    gctgagaggc taaaactcat caaaaacact actccttttc ctctacccta ttcctcaatc
    ttttaccttt tccaaatccc aatccccaaa tcagtttttc tctttcttac tccctctctc
    ccttttaccc tccatggtcg ttaaaggaga gatggggagc atcattctgt tatacttctg
    tacacagtta tacatgtcta tcaaacccag acttgcttcc atagtggaga cttgctttc
    agaacatagg gatgaagtaa ggtgcctgaa aagtttgggg gaaaagtttc tttcagagag
    ttaagttatt ttatatatat aaatatatata taaaatatat aatatacaat ataaatatat
    agtgtgtgtg tgtatgcgtg tgtgtagaca cacacgcata cacacatata atggaagcaa
    taagccattc taagagcttg tatggttatg gaggtctgac taggcatgat ttcacgaagg
    caagattggc atatcattgt aactaaaaaa gctgacattg acccagacat attgtactct
    ttctaaaaat aataataata atgctaacag aaagaagaga accgttcgtt tgcaatctac
    agctagtaga gactttgagg aagaattcaa cagtgtgtct tcagcagtgt tcagagccaa
    gcaagaagtt gaagttgcct agaccagagg acataagtat catgtctcct ttaactagca
    taccccgaag tggagaaggg tgcagcaggc tcaaaggcat aagtcattcc aatcagccaa
    ctaagttgtc cttttctggt ttcgtgttca ccatggaaca ttttgattat agttaatcct
    tctatcttga atctt
```

Figure 13 (B)

SEQ ID NO:77

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     ggcctctc actaactaat cactttccca tcttttgtta gatttgaata tatacattct
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tagaaaatgg aaccactaga ggaatataat gtgttaggaa attacagtca tttctaaggg
cccagccctt gacaaaattg tgaagttaaa ttctccactc tgtccatcag atactatggt
tctccactat ggcaactaac tcactcaaat ttccctcctt agcagcattc catcttcccg
atcttctttg cttctccaac caaaacatca atgtttatta gttctgtata cagtacagga
tctttggtct actctatcac aaggccagta ccacactcat gaagaaagaa cacaggagta
gctgagaggc taaaactcat caaaaacact actccttttc ctctacccta ttcctcaatc
ttttaccttt tccaaatccc aatccccaaa tcagtttttc tctttcttac tccctctctc
ccttttaccc tccatggtcg ttaaaggaga gatggggagc atcattctgt tatacttctg
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ttaagttatt ttatatatat aatatatata taaaatatat aatatacaat ataaatatat
agtgtgtgtg tgtatgcgtg tgtgtagaca cacacgcata cacacatata atggaagcaa
taagccattc taagagcttg tatggttatg gaggtctgac taggcatgat ttcacgaagg
caagattggc atatcattgt aactaaaaaa gctgacattg acccagacat attgtactct
ttctaaaaat aataataata atgctaacag aaagaagaga accgttcgtt tgcaatctac
agctagtaga gactttgagg aagaattcaa cagtgtgtct tcagcagtgt tcagagccaa
gcaagaagtt gaagttgcct agaccagagg acataagtat catgtctcct ttaactagca
taccccgaag tggagaaggg tgcagcaggc tcaaaggcat aagtcattcc aatcagccaa
ctaagttgtc cttttctggt ttcgtgttca ccatggaaca ttttgattat agttaatcct
tctatcttga atctt
```

SEQ ID NO:78

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tagaaaatgg aaccactaga ggaatataat gtgttaggaa attacagtca tttctaaggg
cccagccctt gacaaaattg tgaagttaaa ttctccactc tgtccatcag atactatggt
tctccactat ggcaactaac tcactcaatt ttccctcctt agcagcattc catcttcccg
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gctgagaggc taaaactcat caaaaacact actccttttc ctctacccta ttcctcaatc
ttttaccttt tccaaatccc aatccccaaa tcagtttttc tctttcttac tccctctctc
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agtgtgtgtg tgtatgcgtg tgtgtagaca cacacgcata cacacatata atggaagcaa
taagccattc taagagcttg tatggttatg gaggtctgac taggcatgat ttcacgaagg
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gcaagaagtt gaagttgcct agaccagagg acataagtat catgtctcct ttaactagca
taccccgaag tggagaaggg tgcagcaggc tcaaaggcat aagtcattcc aatcagccaa
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tctatcttga atctt
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Figure 13 (C)

SEQ ID NO:79

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tagaaaatgg aaccactaga ggaatataat gtgttaggaa attacagtca tttctaaggg
cccagccctt gacaaaattg tgaagttaaa ttctccactc tgtccatcag atactatggt
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tctatcttga atctt
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SEQ ID NO:80

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tagaaaatgg aaccactaga ggaatataat gtgttaggaa attacagtca tttctaaggg
cccagccctt gacaaaattg tgaagttaaa ttctccactc tgtccatcag atactatggt
tctccactat ggcaactaac tcactcaatt ttccctcctt agcagcattc catcttcccg
atttcttctttg cttctccaac caaaacatca atgtttatta gttctgtata cagtacagga
tctttggtct actctatcac aaggccagta ccacactcat gaagaaagaa cacaggagta
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ccttttaccc tccatggtcg ttaaaggaga gatggggagc atcattctgt tatacttctg
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agaacatagg gatgaagtaa ggtgcctgaa aagtttgggg gaaaagtttc tttcagagag
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agtgtgtgtg tgtatgcgtg tgtgtagaca cacacgcata cacacatata atggaagcaa
taagccattc taagagcttg tatggttatg gaggtctgac taggcatgat ttcacgaagg
caagattggc atatcattgt aactaaaaaa gctgacattg acccagacat attgtactct
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agctagtaga gactttgagg aagaattcaa cagtgtgtct tcagcagtgt tcagagccaa
gcaagaagtt gaagttgcct agaccagagg acataagtat catgtctcct ttaactagca
taccccgaag tggagaaggg tgcagcaggc tcaaaggcat aagtcattcc aatcagccaa
ctaagttgtc cttttctggt ttcgtgttca ccatggaaca ttttgattat agttaatcct
tctatcttga atctt
```

Figure 13 (D)

SEQ ID NO:81

```
     ggcctctc actaactaat cactttccca tcttttgtta gatttgaata tatacattct
atgatcattg cttttctct ttacagggga gaatttcata ttttacctga gcaaattgat
tagaaaatgg aaccactaga ggaatataat gtgttaggaa attacagtca tttctaaggg
cccagccctt gacaaaattg tgaagttaaa ttctccactc tgtccatcag atactatggt
tctccactat ggcaactaac tcactcaatt ttccctcctt agcagcattc catcttcccg
atcttctttg cttctccaac caaaacatca atgtttatta gttctgtata cagtacagga
tctttggtct actctatcac aaggccagta ccacactcat gaagaaagaa cacaggagta
gctgagaggc taaaactcat caaaaacact actccttttc ctctacccta ttcctcaatc
ttttaccttt tccaaatccc aatccccaaa tcagtttttc tctttcttac tccctctctc
ccttttaccc tccatggtcg ttaaaggaga gatggggagc atcattctgt tatacttctg
tacacagtta tacatgtcta tcaaacccag acttgcttcc atagtggaga cttgcttttc
agaacatagg gatgaagtaa ggtgcctgaa aagtttgggg gaaaagtttc tttcagagag
ttaagttatt ttatatatat aatatatata taaaatatat aatatacaat ataaatatat
agtgtgtgtg tgtatgcgtg tgtgtagaca cacacgcata cacacatata atggaagcaa
taagccattc taagagcttg tatggttatg gaggtctgac taggcatgat ttcacgaagg
caagattggc atatcattgt aactaaaaaa gctgacattg acccagacat attgtactct
ttctaaaaat aataataata atgctaacag aaagaagaga accgttcgtt tgcaatctac
agctagtaga gactttgagg aagaattcaa cagtgtgtct tcagcagtgt tcagagccaa
gcaagaagtt gaagttgcct agaccagagg acataagtat catgtctcct ttaactagca
taccccgaag tggagaaggg tgcagcaggc tcaaaggcat aagtcattcc aatcagccaa
ctgctaagttgtc ctttctggt ttcgtgttca ccatggaaca ttttgattat agttaatcct
tctatcttga atctt
```

SEQ ID NO:82

```
     ggcctctc actaactaat cactttccca tcttttgtta gatttgaata tatacattct
atgatcattg cttttctct ttacagggga gaatttcata ttttacctga gcaaattgat
tagaaaatgg aaccactaga ggaatataat gtgttaggaa attacagtca tttctaaggg
cccagccctt gacaaaattg tgaagttaaa ttctccactc tgtccatcag atactatggt
tctccactat ggcaactaac tcactcaatt ttccctcctt agcagcattc catcttcccg
atcttctttg cttctccaac caaaacatca atgtttatta gttctgtata cagtacagga
tctttggtct actctatcac aaggccagta ccacactcat gaagaaagaa cacaggagta
gctgagaggc taaaactcat caaaaacact actccttttc ctctacccta ttcctcaatc
ttttaccttt tccaaatccc aatccccaaa tcagtttttc tctttcttac tccctctctc
ccttttaccc tccatggtcg ttaaaggaga gatggggagc atcattctgt tatacttctg
tacacagtta tacatgtcta tcaaacccag acttgcttcc atagtggaga cttgcttttc
agaacatagg gatgaagtaa ggtgcctgaa aagtttgggg gaaaagtttc tttcagagag
ttaagttatt ttatatatat aatatatata taaaatatat aatatacaat ataaatatat
agtgtgtgtg tgtatgcgtg tgtgtagaca cacacgcata cacacatata atggaagcaa
taagccattc taagagcttg tatggttatg gaggtctgac taggcatgat ttcacgaagg
caagattggc atatcattgt aactaaaaaa gctgacattg acccagacat attgtactct
ttctaaaaat aataataata atgctaacag aaagaagaga accgttcgtt tgcaatctac
agctagtaga gactttgagg aagaattcaa cagtgtgtct tcagcagtgt tcagagccaa
gcaagaagtt gaagttgcct agaccagagg acataagtat catgtctcct ttaactagca
taccccgaag tggagaaggg tgcagcaggc tcaaaggcat aagtcattcc aatcagccaa
ctaagttgtc ctttctggt ttcgtgttca ccatggaaca ttttgattat agttatcct
tctatcttga atctt
```

Figure 13 (E)

SEQ ID NO:83

```
      gcctctc actaactaat cactttccca tcttttgtta gatttgaata tatacattct
atgatcattg cttttctct ttacagggga gaatttcata ttttacctga gcaaattgat
tagaaaatgg aaccactaga ggaatataat gtgttaggaa attacagtca tttctaaggg
cccagccctt gacaaaattg tgaagttaaa ttctccactc tgtccatcag atactatggt
tctccactat ggcaactaac tcactcaatt ttccctcctt agcagcattc catcttcccg
atcttctttg cttctccaac caaaacatca atgtttatta gttctgtata cagtacagga
tctttggtct actctatcac aaggccagta ccacactcat gaagaaagaa cacaggagta
gctgagaggc taaaactcat caaaaacact actccttttc ctctaccta ttcctcaatc
ttttaccttt tccaaatccc aatccccaaa tcagtttttc tctttcttac tccctctctc
cctttaccc tccatggtcg ttaaaggaga gatggggagc atcattctgt tatacttctg
tacacagtta tacatgtcta tcaaacccag acttgcttcc atagtggaga cttgcttttc
agaacatagg gatgaagtaa ggtgcctgaa aagtttgggg gaaaagtttc tttcagagag
ttaagttatt ttatatatat aatatatata taaaatatat aatatacaat ataaatatat
agtgtgtgtg tgtatgcgtg tgtgtagaca cacacgcata cacacatata atggaagcaa
taagccattc taagagcttg tatggttatg gaggtctgac taggcatgat ttcacgaagg
caagattggc atatcattgt aactaaaaaa gctgacattg acccagacat attgtactct
ttctaaaaat aataataata atgctaacag aaagaagaga accgttcgtt tgcaatctac
agctagtaga gactttgagg aagaattcaa cagtgtgtct tcagcagtgt tcagagccaa
gcaagaagtt gaagttgcct agaccagagg acataagtat catgtctcct ttaactagca
taccccgaag tggagaaggg tgcagcaggc tcaaaggcat aagtcattcc aatcagccaa
ctaagttgtc cttttctggt ttcgtgttca ccatggaaca ttttgattat agttaatcct
tctatcttga atctt
```

Figure 14

```
GAATTCTGTA AGCATTTCCT ATGTGTACCT GCCCCTGGGC AAGGTGGGCC TGACTTGTTA   -1403
GAGTGTTAGA GTTTTACCCT GTTCCTCTAG GAGGGCCTGG TACCACCACA GCCCAGCATG   -1343
GTGTGGTGCC TCAGCAGGAG GCATCTGGTT ACAATCAACA CAAGCTGTTC CAGCCAATTT   -1283
AAAGAAACTT CAGGAGGAAT AGGGTTTTAG GAGGGCATGG GGACCCTCCT GCACCCGAAG   -1223
CCAGGATGTG CCACCAATCA TAAGGAGGCA GGGGCCTCCT TCCGCTGCTC CCTGGGACTC   -1163
TCTAGGTGTC CGTGGCCTCA GCCCCCCTCT GCACACCTGC ATCTTCCTTC TCATCAGCTT   -1103
CCTCTGCTTT AAGCGTAAAC ATGGATGCCC AGGACCTGGC CTCAATCTTC CGAGTCTGGT   -1043
ACTTATGGTG TACTGACAGT GTGAGACCCT ACTCCTCTGA TCAATCCCCT GGGTTGGTGA    -983
CTTCCCTGTG CAATCAATGG AAGCCAGCGA GGCAGGGTCA CATGCCCCGT TTAGAGGTGC    -923
AGACTTGGAG AAGGAACGTG GGCAAGTCTT CCCAGGAACA GGTAGGGCAG GGAGGAAAGG    -863
GGGGCATCTC TGGTGCAGCC CGGTTCGGAG CAGGAAGACG CTTAATAAAT GCTGATAGAC    -803
TGCAGGACAC AGGCAAAGGT GCTGAGCTGG ACCCTTTATT TCTGCCCTTC TCCCTTCTGG    -743
CACCCCGGCC AGGAAATTGC TGCAGCCTTT CTGGAATCCC GTTCATTTTT CTTACTGGTC    -683
CACAAAAGGG GCCAAATGGA AGCAGCAAGA CCTGAGTTCA AATTAAATCT GCCAACTACC    -623
AGCTCAGTGA ATCTGGGCGA GTAACACAAA ACTTGAGTGT CCTTACCTGA AAAATAGAGG    -563
TTAGAGGGAT GCTATGTGCC ATTGTGTGTG TGTGTTGGGG GTGGGGATTG GGGGTGATTT    -503
GTGAGCAATT GGAGGTGAGG GTGGAGCCCA GTGCCCAGCA CCTATGCACT GGGGACCCAA    -443
AAAGGAGCAT CTTCTCATGA TTTTATGTAT CAGAAATTGG GATGGCATGT CATTGGGACA    -383
GCGTCTTTTT TCTTGTATGG TGGCACATAA ATACATGTGT CTTATAATTA ATGGTATTTT    -323
AGATTTGACG AAATATGGAA TATTACCTGT TGTGCTGATC TTGGGCAAAC TATAATATCT    -263
CTGGGCAAAA ATGTCCCCAT CTGAAAAACA GGGACAACGT TCCTCCCTCA GCCAGCCACT    -203
ATGGGGCTAA AATGAGACCA CATCTGTCAA GGGTTTTGCC CTCACCTCCC TCCCTGCTGG    -143
ATGGCATCCT TGGTAGGCAG AGGTGGGCTT CGGGCAGAAC AAGCCGTGCT GAGCTAGGAC     -83
CAGGAGTGCT AGTGCCACTG TTTGTCTATG GAGAGGGAGG CCTCAGTGCT GAGGGCCAAG     -23
CAAATATTTG TGGTTATGGA TTAACTCGAA CTCCAGGCTG TCATGGCGGC AGGACGGCGA     +38
ACTTGCAGTC TCTCCACGAC CCGCCCCTGT GAGTCCCCCT CCAGGCAGGT CTATGAGGGG     +98
TGTGGAGGGA GGGCTGCCCC CGGGAGAAGA --------------------------------
--------------------1350 bp--------------------------------------

                                            MET TRP GLN LEU   -39
---------- AAGAAGTCCT CCTCAGACAG GTGCCAGTGC CTCCAGAATG TGG CAG CTC   +1527
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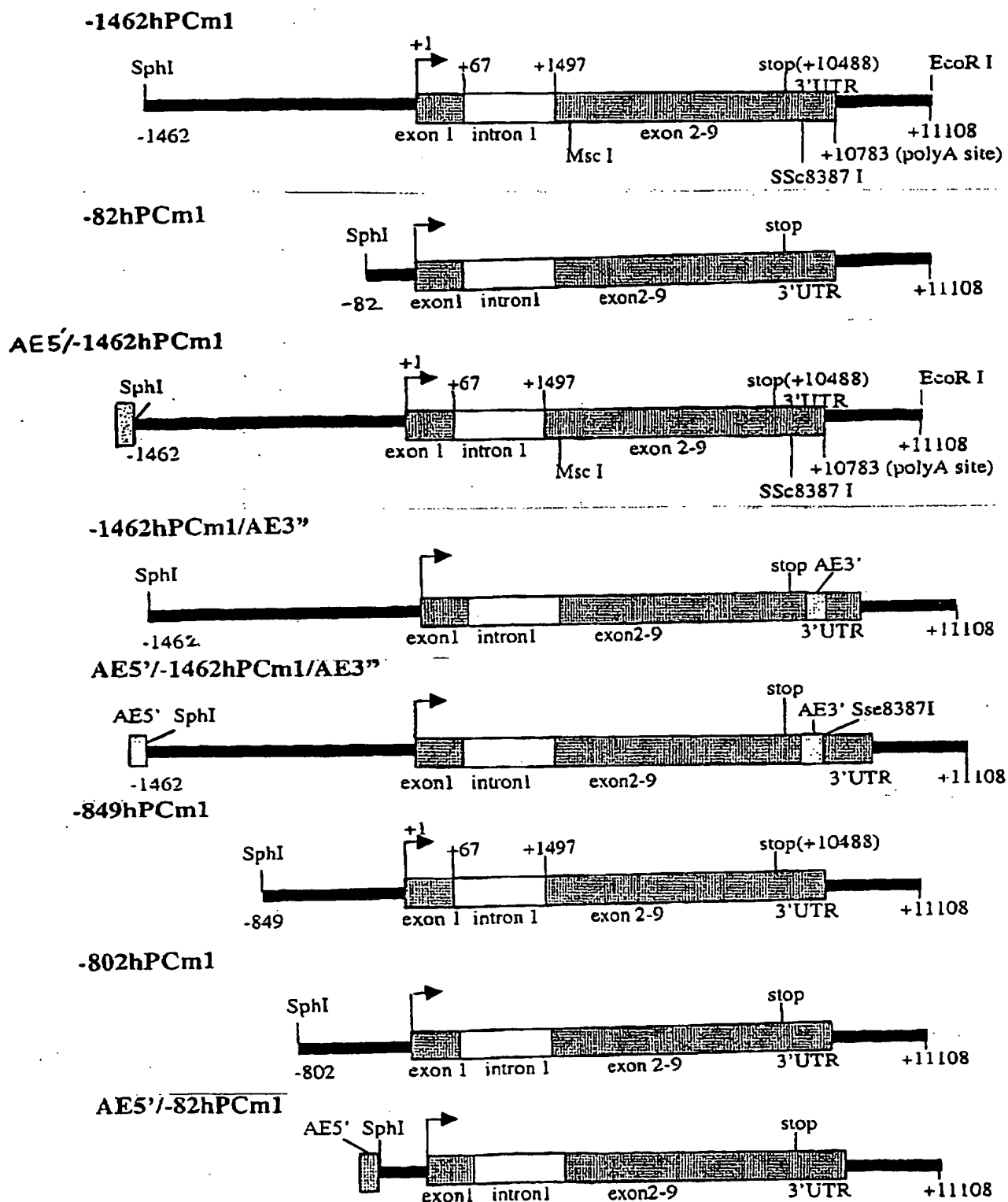
Figure 15

Figure 16
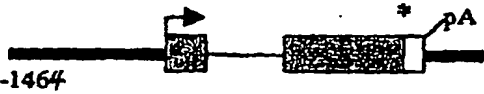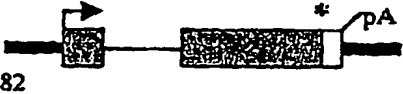
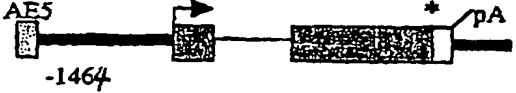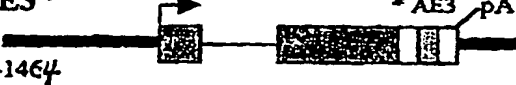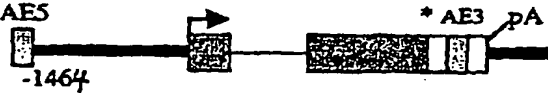| hPC Minigene Constructs	Expression Activity (%±SD)
-1464hPCm1	100
-82hPCm1	98.7±11.8
AE5'/-1464hPCm1	101.9±12.5
-1464hPCm1/AE3"	70.1±7.5
AE5'/-1464hPCm1/AE3"	74.0±3.8

Figure 17A

10/018392

Figure 17B

10/018392

Figure 17C